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10/829,383	04/22/2004	Hiroshi Satoh	61355-056	7080

7590 01/17/2008	EXAMINER	
McDERMOTT, WILL & EMERY	AZARIAN, SEYED H	
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Washington, DC 20005-3096	ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _05 November 2007_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-19_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-7 and 9-19_ is/are rejected.

7)☒ Claim(s) _8_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _22 April 2004_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

RESPONSE TO AMENDMENT

1.   Applicant's arguments, filed 11/5/2007, see page 8 through page 10 of the remarks, with

respect to the rejection of claims 1-19 have been fully considered and are persuasive. Therefore,

the rejection has been withdrawn. However, upon further consideration, a new ground(s) of

rejection is made in view of Kudo (U.S. patent 6,501,503).

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless —
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United
> States before the invention thereof by the applicant for patent, or on an international application by another who
> has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention
> thereof by the applicant for patent.

3.   Claims 1-7, 9, 14-15 and 17-18, are rejected under 35 U.S.C. 102(e) as being

anticipated by Sugiyama et al (U.S. patent 6,858,827).

Regarding claim 1, Sugiyama discloses an image-capturing apparatus

comprising: an image-capturing unit having a plurality of pixels disposed two-

dimensionally (column 6, lines 6-10, the pixels array unit is formed by arranging a

plurality of pixels in two-dimensional matrix);

an adding unit that generates an image by adding outputs of pixels present around a given

pixel at the image-capturing unit to an output of the given pixel (column 11, lines 55-64, four-

pixel addition, lines are scanned one by one in the digital image output);

an image-processing unit that processes the image resulting from addition executed by the

adding unit (column 11, lines 38-63, in addition with the above described, image conformation

can be outputted);

and an addition pattern generating unit that generates an addition pattern with which pixel

outputs are added together by the adding unit in correspondence to a type of image processing to

be executed by the image processing unit (column 4, lines 58-67, circuit elements required for

each of the signal processing operations are arranged together outside pixels, so that a

configuration within each of the pixels can be simplified and minimized. Also, it is possible to

"enhance" the function of obtaining a normal actual image and the computational function for

executing various applications by their respective independent circuit configurations. It is thus

possible to achieve smaller apparatus size, lower power consumption, lower cost, an increase in

the number of pixels of an actual image (higher image quality) and the like. Also column 9, lines

3-34, a resulting current flows into a current mirror circuit 461 simultaneously with the turning

on of the CMOS switch SW2 in the lower portion of the signal line. At this time, an odd-

numbered column and an even-numbered column are connected to each other in front of the

current mirror circuit 461, whereby currents from the two columns flow into the single current

mirror circuit 46. In addition to the simultaneous selection of the two rows, signal addition for

four pixels is thereby completed. A resulting current is amplified by the current mirror circuit

461, whereby a current corresponding to the signals is led in through a signal line SIM_(n+1)/2

within the memory array 47. Finally column 12, lines 20-60, in "addition", the number of pixels

transmitted simultaneously to a single signal line can be changed; at the time of image

information output processing, a signal of one pixel is transmitted to the signal line, whereas at

the other time of arithmetic processing, signals of a plurality of pixels are transmitted

simultaneously to the single signal line. Thus, optimization to suit characteristics of each signal

processing becomes possible (refer to additional pattern), also column 19, lines 1-18, in addition

a control method according to the present invention transmits an image signal obtained by an

imaging pixel in a first signal transmitting path and a second signal transmitting path of a signal

line, and performs different signal processing operation. Also it is possible to enhance the

function of obtaining a normal actual image and the computational function for executing

various applications).

Regarding claim 2, Sugiyama discloses an image-capturing apparatus according to claim

1, wherein: when the image processing unit is to execute image processing for detecting an edge

in the image, the addition pattern generating unit generates the addition pattern in

correspondence to a type of edge to be detected by the image processing unit (see claim 1, also

column 23, lines 13-16, a solid-state image pickup apparatus as claimed in claim 1, wherein first

signal processing unit and second signal processing unit are used for image signal output and

image edge detection).

Regarding claim 3, Sugiyama discloses an image-capturing apparatus according to claim

1, wherein: when the image processing unit is to execute image processing for detecting a

predetermined target object, the addition pattern generating unit generates the addition pattern in

correspondence to the target object to be detected by the image processing unit (column 11, lines

39-54, function of extracting only a moving object (target) within an imaging screen by

performing basically the same operation as the range measurement).

Regarding claim 4, Sugiyama discloses an image-capturing apparatus according to claim 1, wherein: when the image processing unit changes the type of image processing for each captured image frame, the addition pattern generating unit generates the addition pattern in correspondence to the type of image processing for the each captured image frame (column 15, lines 35-46, calculating a difference between frames and change of intensity).

Regarding claim 5, Sugiyama discloses an image-capturing apparatus according to claim 2, wherein: when the image processing unit changes the type of edge to be detected for each captured image frame, the addition pattern generating unit generates the addition pattern in correspondence to the type of edge to be detected which is altered for the each captured image frame (see claim 2, also column 12, lines 20-39, refer to change of edge detection).

Regarding claim 6, Sugiyama discloses an image-capturing apparatus according to claim 1, wherein: a number of pixels the outputs of which are added together with the addition pattern generated by the addition pattern generating unit in correspondence to the type of image processing is adjusted in conformance to one of a frame rate and a length of exposure time set for the image-capturing unit (column 11, lines 23-31, the range of measurement can be performed independently of each other and continuously in different time period).

Regarding claim 9, Sugiyama discloses an image-capturing apparatus comprising: an image-capturing unit having a plurality of pixels disposed two-dimensionally; an adding unit that generates an image by adding outputs of pixels present around a given pixel at the image-capturing unit to an output of the given pixel; an image processing unit that processes the image resulting from addition executed by the adding unit; and an addition pattern generating unit that generates an addition pattern with which pixel outputs are added together by the adding unit in

correspondence to vehicular behavior detected by a vehicular behavior detection unit (see claim

1, also column 18, lines 7-25, refer to motor vehicle).

With regard to claims 7, 14, 15 and 17-18, the arguments analogous to those presented

above for claims 1, 2, 6, 9 are respectively applicable to claims 7, 14, 15 and 17-18.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 10-13, 16 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sugiyama et al (U.S. patent 6,858,827) in view of Kudo (U.S. patent 6,501,503).

However regarding claim 10, Sugiyama does not explicitly state its corresponding

"vibration detection unit that detects a vibration of the image-capturing apparatus". On the other

hand Kudo in the same field motion detection teaches (column 3, lines 13-44, an image pickup

device comprising image pickup means for taking the image of an object and thereby generating

an image signal, vibration detecting means for detecting the viberation of the image pickup

means, filter means with variable filter characteristics for passing the detecting signal generated

by the vibration detection means, output control means for controlling the output of the filter

means, control means for controlling the filter means and the output control means according to

the detecting signal, and optical vibration blur correcting means for optically correcting the blur

in the image taken by the image pickup means, based on the output of the output control means).

Therefore it would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify Sugiyama invention according to the teaching of Kudo because

combination of Sugiyama and Tomita provides device that is capable of detecting vibrations

accurately and efficiently and correcting a vibration as appropriate, which can easily be

implemented in a an imaging device such as image pickup device.

With regard to claims 11-13, 16 and 19, the arguments analogous to those presented

above for claims 1 and 10 are respectively applicable to claims 11-13, 16 and 19.

Allowable Subject Matter

6.   Claim 8 objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

Other prior art cited

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

(U.S. patent 7,164,117) Breed et al is cited for vehicular restraint system control system

and method using multiple optical imagers.

(U.S. patent 7,147,246) to Breed et al is cited for method for airbag inflation control.

(U.S. patent 6,968,073) to O, Boyle et al is cited for occupant detection system.

(U.S. patent 7,136,710) to Hoffberg et al is cited for ergonomic man-machine interface incorporating adaptive pattern recognition based control system.

Contact Information

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR.

Status information about the PAIR system, see http:// pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seyed Azarian
Patent Examiner
Group Art Unit 2624
January 13, 2008

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PRIMARY EXAMINER